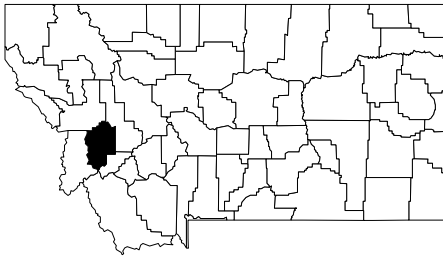
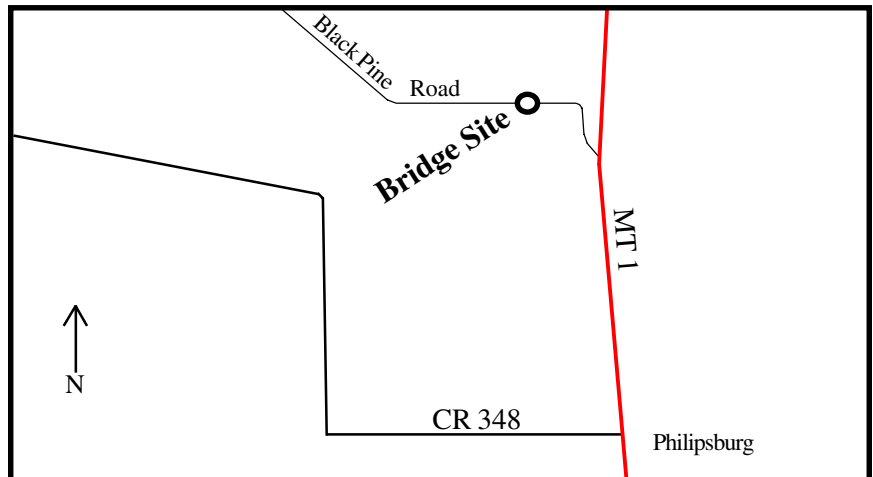


# FLINT CREEK TIMBER BRIDGE, Granite County, Montana



**Type:** Glued-laminated timber stringers and transverse glued-laminated deck  
**County:** Granite  
**Owner:** Granite County, Montana  
**Built in:** 1991  
**Engineer:** Merv Eriksson  
**Spans over:** Flint Creek  
**Bridge length:** 39'-0"  
**Roadway width:** 24'-0"

**Directions:** From Philipsburg and the intersection of MT 1 and CR 348. Travel north on MT 1 approximately 1.5 miles to the intersection of MT 1 and Black Pine Road. Turn left onto Black Pine Road and the bridge site is approximately 0.3 miles from the intersection.



USDA Forest Service

The National Wood In  
Transportation Program



## GEOMETRY

Number of Spans: 1  
 Out-to-out length: 40'-6"  
 Center-of-bearing span lengths: 39'-0"  
 Skew: 0 degrees  
 Number of lanes: 2  
 Out-to-out width: 26'-0"  
 Curb-to-curb width: 24'-0"  
 Number of beams and spacing: 6 @ 4'-4"  
 Superstructure square footage: 1053

Design load: HS-20  
 Deadload: Approx. 245 lbs/ft/beam  
 Averaged daily traffic: 100  
 Superstructure design by: Merv Eriksson,  
 USDA Forest Service  
 Substructure design by: Merv Eriksson,  
 USDA Forest Service

Total project cost: \$74,430  
 Total superstructure cost: \$30,500  
 Total superstructure cost /sq ft: \$28.96

## MATERIAL

### **DECK**

Material: Wood/glulam  
 Species: Coastal Douglas-fir  
 Allowable bending stress: 1,760 psi  
 Sizes used: 5-1/8" x 48" x 26'-0"  
 Quantity: 5,330 bf  
 Preservative treatment: Pentachlorophenol,  
 Type A Solvent (heavy oil)  
 Wearing surface: 3" x 12" coastal Douglas-fir  
 planks

### **BEAMS/STRINGERS**

Material: Wood/glulam  
 Species: Coastal Douglas-fir  
 Allowable bending stress: 2,200 psi  
 Sizes used: 8-3/4" x 31 1/2" x 40'-0"  
 Quantity: 5,512 bf  
 Preservative treatment: Pentachlorophenol,  
 Type A Solvent (heavy oil)

### **BRIDGE GUIDERAIL & APPROACH RAIL POSTS**

Material: Wood/glulam  
 Species: Coastal Douglas-fir, Grade No. 1  
 Sizes used: 8" x 10", 6" x 8", 10" x 10"  
 Preservative treatment: Pentachlorophenol,  
 Type A Solvent (heavy oil)

### **BRIDGE GUIDERAIL & APPROACH RAIL**

Material: Weathering steel (type-IV) w-beam  
 Size: 3-1/8" x 13-1/2"

### **ABUTMENTS**

Material: Wood  
 Species: Coastal Douglas-fir  
 Grade: No. 1 or better  
 Preservative treatment: Pentachlorophenol,  
 Type A Solvent (heavy oil)  
 Hardware & structural steel: A 36 black  
 steel, A 307 bolts & nuts (uncoated)

### **ABUTMENTS(continued)**

Abutment type: Treated timber retaining wall  
 w/tie-backs  
 Abutment height (bottom of footings to top  
 of deck): 10'-6"

**LOCAL IMPACT:** This bridge carries Black Pine Road over Flint Creek in Granite County, Montana. The bridge is used by mining, ranching, and recreational/tourist traffic.

**BRIDGE PERFORMANCE:** This two lane, glued-laminated treated timber bridge replaced a 38 year old single lane untreated king post timber bridge. The existing bridge was removed, the treated timber abutments installed, beam and deck panels set, bridge and approach guardrail system installed, and roadfill placed during an 8 day construction period.

**FUNDING SOURCES:** USDA Forest Service: \$45,000; Balance of funding from Granite County, Montana.

**LOCAL CONTACT:** Merv Eriksson, Structural Engineer  
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Information provided by Merv Eriksson

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Northeastern Area  
 State and Private Forestry